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ABSTRACT

Between 1992 and 1996, the John S. and James L. Knight Foundation awarded nearly $7.5 millions to support 26 education-reform programs nationwide. This report presents outcomes of the 26 projects, which focused on developing collaboration between schools and institutions of higher education. The report examines the effects of school-college partnerships on students and teachers at the elementary, secondary, and postsecondary levels. Data were gathered from site visits to 16 projects in their second or third year of foundation support and from surveys of individual participants. The evaluation found that school-college partnerships can foster significant improvements in educational opportunities that, in turn, contribute to greater student learning. Chapter 1 describes collaborations as relationships of varying types--cooperative, symbiotic, and organic. Chapters 2 through 4 present the actual lessons learned about the stages of project design, implementation, and evaluation. Each lesson in the report is accompanied by examples from projects that illustrate a lesson learned or a feature of implementation. The fifth chapter describes how the evaluation has influenced the foundation's planning for next steps of the Excellence in Education program. Appendices contain descriptions and contacts for the 26 projects, a summary of lessons learned, and a list of topics and issues addressed by the projects. (LMI)

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Learning to Collaborate

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Lessons from School-College Partnerships in the Excellence in Education Program

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Learning to Collaborate

Lessons from School-College Partnerships in the Excellence in Education Program

November 1996

Prepared for the John S. and James L. Knight Foundation
by Policy Studies Associates, Inc.

Table of Contents

INTRODUCTION i

CHAPTER 1. COLLABORATIONS ARE RELATIONSHIPS 1

CHAPTER 2. LESSONS LEARNED ABOUT PROJECT DESIGN 5

2.1 Give each major stakeholder a place at the table 6

2.2 Go right to the source: Base project goals on participants' needs, concerns, ideas, and strengths 9

2.3 Create learning opportunities among partners 11

2.4 Think ahead: Prepare a long-range development and management plan . . . 14

CHAPTER 3. LESSONS LEARNED ABOUT PROJECT IMPLEMENTATION 17

3.1 Before launching a project, make sure key decisionmakers and leaders are on board 18

3.2 Use a team approach to link partners and goals 20

3.3 Open doors to prevent closed minds 21

3.4 Involve teachers as leaders 24

3.5 Keep everyone in the loop: Meet regularly with all partners to share information 26

3.6 Reach out to parents and community members 28

CHAPTER 4. LESSONS LEARNED ABOUT PROJECT EVALUATION 31

4.1 Useful evaluations are continuous and inclusive 32

4.2 Evaluation information helps all partners understand and improve the project . 35

4.3 An evaluation should be a boon, not a burden 36

4.4 Good evaluations are done with—not to—participants 38

CHAPTER 5. NEXT STEPS: KNIGHT FOUNDATION SUPPORT FOR EXCELLENCE IN EDUCATION 41

CONCLUSION: COLLABORATIONS EVOLVE 44

APPENDIX A. PROJECT DESCRIPTIONS AND CONTACTS 45

APPENDIX B. SUMMARY OF LESSONS LEARNED ABOUT SCHOOL-COLLEGE COLLABORATION AND ILLUSTRATIONS 49

APPENDIX C. TOPICS AND ISSUES ADDRESSED BY PROJECTS 50

Introduction

Background: The Excellence in Education Program

A long tradition of support for higher education and a new interest among trustees in public school reform led the John S. and James L. Knight Foundation in 1992 to initiate the Excellence in Education program. By 1996, the program had awarded nearly $7.5 million to support 26 education reform projects nationwide that bring schools and higher education institutions together in partnerships to improve learning opportunities for students.

Knight Foundation began the program with the belief and expectation that higher education institutions of all types have the capacity and the responsibility to contribute to the strengthening of public schools. As the program took shape, the Foundation recognized that colleges and universities also can learn and strengthen themselves for the future by cultivating mutually beneficial relationships with schools. The experience of this program expanded the Foundation's conception of education reform from a focus on K-12 to a new emphasis on K-16. In the planning, refinement, and administration of the program, Knight Foundation was aided significantly by its Education Advisory Committee, a group of distinguished educators with varied backgrounds of experience and perspective.

Carefully selected groups of institutions were invited to submit proposals for each of three consecutive annual competitions, resulting in the awarding of eight grants in 1992, ten grants in 1993, and eight grants in 1994. Each grant provided up to $250,000 over three years. Initially, the Foundation selected colleges and universities and invited them to propose collaborative projects with local schools. Concerns about the lack of parity in the way schools and colleges have traditionally interacted, however, soon led the Foundation to approach school districts first and ask them to identify their preferred higher education partners. The application process was also refined to encourage proposals that were themselves true products of collaboration.

In order to be eligible, proposed projects had to: (1) address the needs of teachers, students and/or schools at some level in a K-12 public school system or systems; (2) introduce a new, creative initiative or extend a demonstrably successful program in new directions or to new populations; (3) define success in a way that was compatible with and sensitive to the school partner's objectives; and (4) present clear expectations for each year of activity and specific methods for assessing short- and long-term impact.

In addition, the Foundation encouraged projects that addressed any of the following concerns: (1) the middle school years; (2) curriculum reform in the areas of reading, writing, mathematics, and/or the natural sciences; (3) a focus on keeping students in school and engaged in learning; (4) involvement of college faculty from core liberal

arts disciplines; (5) involvement of other higher education or community partners in addition to the applicant institution and the local schools; and/or (6) use of creative methods for assessing impact.

Purpose and Overview of This Report

Because it is keenly aware of both the potential and the problems associated with school-college collaboration, Knight Foundation is committed to going beyond the simple provision of resources for K-16 reform. It seeks to understand the effects of its program and the persistent and emerging needs of those engaged in joint work to improve student learning. To that end, the Foundation in 1995 commissioned an evaluation by Policy Studies Associates, Inc. to examine the grant projects and the Excellence in Education program as a whole. The aim was to learn about the effects of school-college partnerships on students and teachers at elementary, secondary, and postsecondary levels.

Based on site visits to 16 projects in their second or third year of Foundation support and surveys of individual participants, the evaluation found that school-college partnerships can foster *significant* improvements in educational opportunities that, in turn, contribute to greater student learning. The evaluation also documented the lessons that the projects have learned about building more effective relationships between colleges and schools. This report presents these lessons.

The Excellence in Education program has clearly illustrated that collaborations can take many forms. Some projects, for example, were the outgrowth of relationships between institutions that have been nurtured for many years; others brought partners together for the first time. In Chapter 1, Betty Lou Whitford describes collaborations as relationships of varying types—cooperative, symbiotic, and organic. Her analysis provides a frame for appreciating the variety of relationships represented in the Excellence in Education program and their varied stages of development.

Chapters 2, 3, and 4 present the actual lessons drawn from the program evaluation. Grouped according to three stages—project design, implementation and evaluation—the lessons illustrate the core principles on which successful school-college collaborations are built. For educators and citizens interested in developing school-college partnerships, the report suggests many approaches to establishing productive relationships across the educational spectrum.

Throughout the report, each lesson is accompanied by examples from projects that either illustrate how the principles of successful partnerships were implemented or describe the actions and events that led partners to learn the importance of a given principle. All of the examples underscore the value of learning from early experiences in developing a mutually respectful and beneficial relationship between schools and colleges.

Chapter 5 describes how the evaluation has influenced the Foundation's planning for next steps in the development of the Excellence in Education program and transitional support for current projects.

The report's conclusion summarizes the implications of the lessons documented by the evaluation, underscoring the point that collaborations are relationships that can and should evolve. As participants identify ways to strengthen these relationships and reflect on lessons learned, they can open opportunities for continuous improvement of projects and institutions. Although participants in the Excellence in Education projects learned that educators must take deliberate steps to establish and nurture productive relationships, they found the results are well worth the effort. School-college collaborations offer promise of stimulating comprehensive education reform and help ensure that students are engaged in high-quality academic opportunities—from kindergarten through college.

Three appendices at the end of the report provide helpful overview and summary information. Appendix A presents a list of all 26 projects with brief descriptions and contacts. Appendix B summarizes the lessons learned and lists the projects from which each lesson is drawn. Appendix C charts the special topics and issues addressed by the projects presented in this report. ●

Collaborations are Relationships

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Betty Lou Whitford

Relationships between educators in public schools and in higher education institutions vary widely. Some are collegial, productive, and long-lasting; others are one-sided, contentious, and short-lived. Yet, public schools and higher education institutions have much to learn from one another. Long-term relationships, often rocky in the early stages, are sustained in part because the partners encounter problems and together invent new, mutually beneficial approaches to addressing them.

Since the projects supported by the Excellence in Education Program vary in many ways, it is useful to think about them—and other school-college partnerships—as representing particular types of collaboration. In 1988, Phillip Schlechty and I proposed three types of collaboration. We suggested that collaborations between schools and higher education can be *cooperative*, *symbiotic*, or *organic*.

Cooperative relationships generally develop based on personal contacts, perhaps growing out of friendships, work in the community, or from former professor-student relationships. The joint work is an "extra" project with a known beginning and end that requires and receives minimal institutional support. Examples include: A chemistry professor occasionally demonstrates experiments in her neighbor's high school classroom; every spring, an artist from the local community college leads a day-long pottery workshop for elementary school teachers; a political science professor works with an education professor to help a middle school teaching team develop a unit on the presidential elections; an English teacher meets with a college composition faculty to discuss how the high school scores student writing portfolios.

While cooperative relationships are mostly based on personal association, *symbiotic* relationships are characterized by mutual institutional interest. The joint work may be the same as in cooperative projects, but it is recognized and rewarded by the institutions through merit pay, promotion and tenure guidelines, released time and the like. The school system gives the English teacher released time to meet with the college faculty, and the chemistry professor is encouraged to continue her work with the high school because her efforts are counted toward promotion and tenure.

And because of the institutional support, symbiotic relationships can result in more joint work. For example, in exchange for coaching the middle school teaching team, the professors gain access to the school for a research project. One decides to study political socialization, while the other tracks student engagement in the new unit. The curriculum unit that results helps the school, while the access for research helps the higher education institution.

Betty Lou Whitford is Professor of Education at the University of Louisville and a member of the Knight Foundation's Education Advisory Committee.

In a third type of collaboration, one that is *organic*, the agendas of the partners merge. The result is a shared goal—a common good—rather than reciprocal benefit. Moreover, both the collaboration and the shared goal are institutionally recognized and supported. Particular views of the common good, the shared goal, may change over time but the process of collaboration becomes a routine, accepted way of working rather than an "extra" or special project. For example, the teachers and professors in the previous examples join with other colleagues and their students to link teacher education, professional development, and shared inquiry around jointly determined problems of practice: What should the art curriculum include? How do young students best learn chemistry? Do high school and college composition instructors evaluate writing using similar criteria?

Readers will recognize similar experiences in this report, confirming that schools and higher education institutions can indeed work together for mutual benefit—cooperatively, symbiotically, and organically. Along the way, each partnership must confront a range of issues about collaboration and education improvement as joint work is designed. The lessons in this report can provide educators, administrators, policymakers, and citizens with much wisdom as they chart their own courses and invent their own solutions for education reform.[1] ●

[1] For a more detailed discussion, see P.C. Schlechty and B.L. Whitford (1988), "Shared Problems and Shared Vision: Organic Collaboration," in K.A. Sirotnik and J.I. Goodlad (Eds.), *School-University Partnerships in Action: Concepts, Cases, and Concerns*. New York: Teachers College Press, pp. 191-204. Also, P.C. Schlechty and B.L. Whitford (1988), "Types and Characteristics of School-University Collaboration," *Kappa Delta Pi Record*, 24(3), pp. 81-83.

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Lessons Learned about Project Design

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2.1 Give each major stakeholder a place at the table.

Does the planning and oversight process include all of the partners whose cooperation and insight are essential to the project's success?

A shared vision is vital to a strong school-college partnership, but it requires communication, negotiation, and compromise among all key stakeholders, including project staff, educators, parents, and community members. Educators in some Excellence in Education projects told evaluators they regretted being excluded from the decisionmaking process, especially during early project planning and proposal development. By excluding some stakeholders, these projects lost valuable insights that could have contributed to later success, as well as the chance to clarify project goals, participants said. The inclusive policies and practices used by other projects resulted in greater coherence and efficiency.

COLUMBIA COLLEGE
Columbia, S.C.

Schools as the Center of the Community Project

In partnership with a nearby elementary school and a middle school, Columbia College operates the Schools as the Center of the Community Project (SCCP). The project's goal is to improve student achievement through a comprehensive initiative that addresses students' academic, health, and social service needs. The project has three components. A school-based comprehensive services model provides students and their families with access to health and social services through students' schools. The Professional Development Schools initiative places Columbia College preservice teachers at the two schools to gain teaching experience. Current teachers also receive additional professional training through this initiative. The third component offers students in the participating schools a summer enrichment program.

SCCP staff learned that it was essential to involve teachers and administrators in the early planning and development stages of this comprehensive project. In the first year of implementation, teachers voiced their confusion to project evaluators and staff over the project's broad goals (i.e., "school as the center of the community"). In particular, they said they did not understand how the three project components fit together. Project

coordinators confirmed that this lack of understanding hampered program implementation. Moreover, teachers and administrators believed that it would have been useful for them to have been involved in the early stages of program planning. Program implementation would have been smoother, teachers said, if they, as well as parents, had been included in the planning stages through face-to-face meetings and "not just through fliers."

The project director and Columbia College faculty responded to the teachers' concerns by developing a free, for-credit course—ED 790: Teaching in a Full Service School—for administrators and teachers at both schools. The course informed participants about the project's comprehensive goals and how the various components were interrelated. Course participants developed plans for implementing the project in their schools. Teachers said that their involvement in the course increased their level of understanding and commitment to the project.

By listening to teachers and using information from the project's internal evaluation, project staff learned that increasing the involvement of teachers and administrators in planning was essential to effective implementation. Informing participants about the project and involving them in designing an implementation plan helped create a sense of ownership and commitment to the project. The project staff reported that, through

Curriculum emphasizing integrative, interactive learning is at the heart of the Project TEAMS (Technology Enhancing Achievement in the Middle Schools) approach in Tallahassee, Florida. Clockwise, from the top: Fairview Middle School teacher Caroline Milhan and students Camile Thomas, Essence Hinson and Andrew Wood.

these experiences, participants now see the three project components as interrelated and as part of a comprehensive effort to make the school the center of the community.

FLORIDA STATE UNIVERSITY
Tallahassee, Fla.

Technology Enhancing Achievement in Middle Schools

The University collaborates with three middle schools to implement TEAMS (Technology Enhancing Achievement in Middle Schools), a technology-based curriculum emphasizing integrated, interactive learning. During the first 18 months of the project, the project staff worked with one of the middle schools to develop and test the curriculum.

The project staff said that including teachers at the start of project planning had significantly improved the project's design and increased teacher buy-in, especially because the project required significant changes in classroom instruction. Teachers worked with Florida State's project staff during the first year to develop and test the curriculum at a local middle school. "From the very beginning, we sat down with teachers to discuss the structure the curriculum should take," the project director said. "We held a two-week workshop, where staff worked with teachers every day to fine-tune and develop new lessons." The director noted that maintaining ongoing communication with the teachers was essential to the project's early and continued success. The project staff convened formal meetings with teachers two or three times a semester to discuss implementation issues. The project manager (a veteran of 18 years of teaching) and other staff members also met with small groups of teachers at their schools every other week to review the project's progress and resolve any problems. The project director said that establishing an inclusive process provided important opportunities for all those involved to share ideas and make key program improvements. ●

2.2 Go right to the source: Base project goals on participants' needs, concerns, ideas, and strengths.

Have project planners assessed the needs and conditions of participants and the community early in the planning design process? Have they used this understanding to create a project that includes and responds to real issues—and real people?

People rarely benefit from programs that offer inappropriate services or dictate unwelcome goals. Although none of the Excellence in Education projects conducted formal assessments of local conditions and needs, a few project coordinators emphasized the importance of listening to participants' questions, eliciting their ideas, and organizing activities around their concerns. Project staffs learned that they could avoid problems and improve the quality of project activities by assessing participants' needs during the early stages of project development.

JUNIATA COLLEGE
Huntingdon, Pa.

Science in Motion
Biology Van Project

Juniata College implements its Excellence in Education project in 21 nearby rural school districts where its biology van makes visits daily to deliver equipment and lab supplies. The project uses modern scientific instruments and techniques to provide junior high and high school students with high-quality learning experiences. The project has also established a network for participating teachers to share ideas and questions with the college and one another. In addition, biology and other science teachers participate in summer institutes and receive classroom-based technical assistance throughout the school year.

The project director operates the Science in Motion project as a teacher-led, bottom-up initiative. The director, a chemistry professor at the college, believes that teachers are the ultimate source of ideas for what works in classrooms. Listening to teachers, he says, has been the basis for program management since the inception of the project. The project emerged from a simple question the project director posed to a group of science teachers: "What do you need?" The response was high-quality science equipment and ongoing assistance in the classroom to operate the equipment and implement science labs. Since

As part of Juniata College's Science in Motion program, these central Pennsylvania high school and middle school teachers attend a workshop to prepare them to use high-tech equipment in educating their chemistry and biology students.

that time, the project director has informally and formally (through workshop evaluations) assessed teachers' needs to inform the project and the summer institutes held each year. As a result, the project incorporated teacher-led, hands-on workshops and teacher-developed laboratory lessons. The key to the project's success, teachers said, was the project staff's sensitivity to and respect for teachers' ideas and needs. ●

2.3 Create learning opportunities among partners.

Do college and public school partners have opportunities to learn about each other's education systems and environments?

Deliberate interaction between college and school partners during early project planning gives each educator a chance to understand the differences and similarities between school and college learning cultures. These interactions can be in the form of early orientation meetings or other initial coordination events. A few projects also developed liaison roles for teachers to help keep college faculty and school-level educators informed of each other's educational priorities and concerns. Creating learning opportunities can help school-college partners clarify misconceptions, highlight potential problems, and identify expectations and needs — information that project staff can use to design goals and activities.

COMMONWEALTH PARTNERSHIP
Lancaster, Pa.

The Initiative for Integrated Math and Science Teaching

The Commonwealth Partnership is a statewide consortium of 12 independent colleges and universities that came together in order to improve education through school-college collaboration. Located at Franklin and Marshall College in Lancaster, the Initiative for Integrated Math and Science Teaching works with 106 teachers in grades K-12 from nine school districts in the South Central Pennsylvania area. During summer and academic-year workshops, the project brings five multigrade teams of elementary and secondary school teachers together with 31 college-level colleagues. Together, they develop integrated math and science curricula based on an open-ended, problem-solving approach.

Participating teachers said they were enthusiastic about their opportunities to interact with college faculty through hands-on workshops led by professors during the summer institutes. They found that the faculty of the summer institutes were excellent sources for up-to-date learning materials and content area expertise. Teachers, however, discovered that one drawback to the school-college collaboration was the college faculty's lack of

Nancy B. Rogers/Commonwealth Partnership

On a day trip to Pennsylvania's Conodoquinet Creek, students listen intently to Steve Bodley, an East Pennsboro teacher participating in the Commonwealth Partnership's Initiative for Integrated Math and Science Teaching (IMAST).

familiarity with K-12 education. For example, teachers were frustrated with the workshops that used college-level assessment techniques (paper and pencil quizzes and take-home exams) and teaching methods (meeting with students during office hours). Teachers said that the college faculty did not know that public school teachers do not have office hours, have 45-minute classes instead of three-hour lab periods, and desire a variety of assessment methods, including assessments that measure students' work in teams and students' hands-on demonstration of scientific principles.

Teachers also said that the college faculty's approach to teaching teachers sometimes lacked openness and flexibility. One teacher said, "Professors are used to being experts. They are so focused and rigid because of their research and are used to strongly defending their expertise. We put things in open-ended queries, and they put things in statements."

Teachers, however, understood the college faculty's lack of familiarity with elementary and secondary teaching. As one teacher said, "The college faculty can only look at our experience through their experience. It takes time to talk these things out." The college faculty readily acknowledged their lack of familiarity with K-12 education. "[The faculty] was naive about elementary, middle, and high school classrooms. We didn't know what happened in the trenches."

One way that faculty members were able to learn more about teachers' needs was through the "pre-college" faculty — three teachers from area schools who were assigned as project assistants. As one pre-college faculty member said, "The pre-college faculty often serve as the de facto link between the teacher participants and the [college faculty]. There is still an intimidation factor because the college professors are viewed as experts. We are a bridge between the teachers and professors." One professor said that the pre-college faculty served as the "reality check" for himself and his colleagues, informing them of K-12 budget constraints and other elementary and secondary school issues.

At the beginning of the project's second year — before the teacher interns were scheduled to spend time in the schools — FOCUS sponsored a weekend seminar for mentor teachers, interns, college project and school staff, and professors in the university's education department. Participants in the seminar reviewed the project's goals and discussed their expectations for the project. Teachers credited this seminar with identifying and helping to resolve program problems before they materialized. Mentor teachers and interns discussed their expectations for the upcoming year and developed a contract that spelled out their respective commitments. "It was an opportunity for bonding," one teacher commented. ●

FLORIDA INTERNATIONAL UNIVERSITY
Miami, Fla.

For Our Children in Urban City Schools

The university works with the Dade County Public Schools and community partners to deliver professional training as part of For Our Children in Urban City Schools (FOCUS). The project works in particular with teacher trainees who intend to teach in inner-city schools and communities. The program also offers professional development experiences to university faculty and classroom teachers.

2.4 Think ahead: Prepare a long-range development and management plan.

Does the project's plan include short- and long-term goals as well as the activities and supports required to implement each goal?

An effective long-range plan outlines both short- and long-term goals and identifies activities and supports needed to implement each goal. The plan anticipates implementation obstacles and includes strategies to deal with each challenge. In a school-college collaboration, a development and management plan should include strategies for implementing and institutionalizing the project at all education levels. Plans should be sufficiently flexible to adapt to program design and implementation issues as they change and evolve. Although none of the Excellence in Education projects developed a plan that met all of these criteria, some project staffs learned the lesson of planning ahead, thinking in developmental stages, and identifying ways to implement and install their projects within public schools, districts, and universities.

MOUNT HOLYOKE COLLEGE
East Hadley, Mass.

HAMPSHIRE COLLEGE
Amherst, Mass.

Reach for the Future

The two colleges collaborate with three middle schools in Springfield and three middle schools in Holyoke in a summer program to remedy academic failure among students and to stimulate professional development among teachers. To develop students' academic skills, professional development focuses on helping teachers learn strategies for inquiry-based learning, which is also known as teaching for understanding.

The project staff learned to anticipate the uncertainties and complexities of local school district politics. According to project staff, several "conservative, no-taxes" school board members tabled their district's approval of the project. Among their other objections, the school board members were reluctant to provide released time to teachers to participate in project activities. Responding to these roadblocks, the staff moved the project to a neighboring district at the last minute. Although the first district decided in the end to approve the project, their initial lack of support delayed and shortened the project's implementation schedule. Based on this experience, the project staff learned that it is important to anticipate district political issues and develop back-up plans to deal with each obsta-

cle that might arise. They further suggested that projects try, in particular, to anticipate the more typical district problem of frequent staff turnover, and they recommended the development of strategies for continuously strengthening relationships between project staff and district administrators.

UNIVERSITY OF SOUTHERN MISSISSIPPI
Hattiesburg, Miss.

Mathematics Standards Project

In partnership with the Biloxi public school system, the University of Southern Mississippi has developed and is beginning to implement a new districtwide K-12 math curriculum based on national mathematics standards. Seventeen teachers from the participating schools participate in the project; each participant also leads a team of math teachers in his or her school. Project activities include monthly training sessions and summer workshops to develop the curriculum.

The university's project participants learned that one way to facilitate the institutionalization of the initiative within the district and receive district support was to connect the project plan to several district objectives, which in this case included the selection of a new textbook series in math. "Everything gelled at the same time," noted one teacher. Teachers said that their participation in the district textbook selection committee complemented their curriculum development activities, rather than taking time away from them. The assistant superintendent described the university project as her "greatest ally instructionally." She said the public school administrators and teachers who served on the textbook selection committee were extremely helpful in reviewing the books and determining whether they aligned with state and national standards. Overall, she remarked, the linkage of the curriculum development project with textbook selection made it easier for the district to address the new math standards.

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE
CENTRAL PIEDMONT COMMUNITY COLLEGE
Charlotte, N.C.

Mathematics Pathways

Mathematics Pathways is a joint project of the University of North Carolina at Charlotte, Central Piedmont Community College, and the Charlotte-Mecklenburg Schools. The goal of the project is to improve students' competence in mathematics by improving the quality of K-16 instruction. Twenty-six middle school teachers participate in the project with one teacher from almost every middle school in the district involved. The project supports several school-year workshops and a two-week summer math camp. Organized by project staff at Central Piedmont Community College and held on that campus, the camp provides teachers with opportunities to practice innovative instructional techniques with middle school students and receive feedback from project staff.

At the early stages of the initiative, project staff learned the importance of incorporating flexibility into their project plan. Observing that the project was having a minimal impact on math instruction in the participating higher education institutions and that faculty there tended to resist change, project staff realized that they needed to develop long-range strategies for project institutionalization at the college level. As a result, the project director offered workshops on the project to graduate students in the math department at the university, most of whom taught undergraduate math courses. A teacher liaison to the project, who is a former K-12 teacher, was also asked to consult with a university-level committee on how to improve math education curricula and instruction at the university. Although the project staff was unsure what effect these efforts would have on the university, there was a sense among the staff and participants that these early steps were important in the long-term success of the project.

In addition, involving faculty members from core liberal arts departments helps to ensure that many academic disciplines are involved in K-16 educational reform. With this exposure, the project becomes known to a wider circle of faculty and students in the institution. This involvement also exposes public school participants to a wide range of content area experts. ●

CHAPTER 3

Lessons Learned about Project Implementation

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3.1 Before launching a project, make sure key decisionmakers and leaders are on board.

Have key administrators and decisionmakers at postsecondary and K-12 levels signed on to support the project staff and project participants (teachers, college faculty) who will develop and implement project activities?

Early and ongoing support from school leaders helps assure a permanent place for a project within the school and college settings. School and district administrators can show support by providing released time and substitute staff so teachers can participate in professional development; principals can provide time at the school site for teachers to plan project activities. At the postsecondary level, participating faculty can be allowed to teach fewer classes, and college students can receive academic credit for project participation. Education administrators at postsecondary, district, and school levels can display their support by participating in project committees and other support activities.

COLUMBUS COLLEGE
Columbus, Ga.

Algebra for All

The Algebra for All project serves 22 high schools and 11 middle schools across 12 public school systems and four private schools. The goal of the project is to improve student achievement in algebra by helping teachers improve their teaching techniques and testing methods. Project activities include monthly staff development activities provided by Columbus College-based leaders of the Columbus Regional Mathematics Collaborative and direct assistance in participants' classrooms as they implement new instructional methods.

Project staff learned that securing support from school principals was the key to implementing and institutionalizing their algebra program in area schools successfully. After a year of providing teacher training and enacting the curriculum reforms in classrooms, the project staff noted that attendance at monthly workshops and overall commitment to the project varied among project participants. Project staff slowly began to learn that school principals understood very little about the project. Very few of them actually knew what type of training their teachers were receiving. Following this realization, the project director sent letters to the principals encouraging them to attend workshops and provide their teachers with

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released time, common planning periods, and a lighter course load. These requests, however, were generally not met.

In retrospect, the project director said she learned that meeting with principals early in the planning and implementation stages would have helped ensure that teachers received the support they needed to apply new instructional methods in their classrooms. Principals' lack of knowledge and involvement in the project, she said, sent a "negative message to teachers" that the project was a low priority. Without principals' support, the project lacked legitimacy, making it difficult for teachers to recruit their peers to the project. The project director concluded that more needed to be done to increase principal buy-in. A renewed effort was needed to inform principals about the project and the supports that were essential to effect real change. As the director said, "Building administrators say they want things to happen, but teachers don't see them as enabling them to happen."

UNIVERSITY OF SOUTHERN MISSISSIPPI Hattiesburg, Miss.

Mathematics Standards Project

The university reduced the course load of a faculty member and a lead trainer in order to permit them to participate in this math reform project. With this extra time, the project staff visited classrooms to demonstrate instructional techniques and provide teachers with feedback and ideas for improving their teaching methods. The K-12 participants believed that the opportunity for postsecondary faculty to visit their classes and offer ideas and suggestions contributed significantly to the project's success. ●

Participants in the Algebra for All Project in Columbus, Ga., take part in an exercise at Columbus College. From left to right: Jane Turczynski, Billy Pickens, Brinkley Pound and Charles Elmore.

3.2 Use a team approach to link partners and goals.

Does the project have a mechanism for bringing teachers together so they can share responsibility for implementation?

Instead of relying on a single, isolated teacher from each school to lead implementation, effective projects recruit a team of teachers from participating schools and districts. Project staff learned that this approach encourages collaboration, fosters group planning, and helps embed the project within each school or district. Teams also give educators a forum for discussing problems and sharing solutions during implementation. Establishing a team of postsecondary faculty members to participate in the project can serve the same purpose.

MOUNT HOLYOKE COLLEGE
East Hadley, Mass.

HAMPSHIRE COLLEGE
Amherst, Mass.

Reach for the Future

Teachers participate in this project as members of school-based teams. In project evaluations, teachers reported that working in a team was one of the most useful aspects of the program. The team structure allowed teachers time to plan and share ideas about the new teaching methods they were learning. Working in teams also provided a safe, nonthreatening peer support network to practice new methods and reflect on teaching practice. During the project's summer institute in which teachers worked with students on interdisciplinary curricula, teachers were paired across disciplines to team-teach a classroom. For this work, teachers from different schools were placed together to provide the school-site teams with common, yet slightly varied ideas and experiences to share with each other when they reconvened. ●

3.3 Open doors to prevent closed minds.

Does the project provide opportunities for participants to enter each other's educational worlds to learn from one another and share expertise?

Participants in a collaborative project must be able to visit each other's education environments in order to learn and model new strategies, gain inside knowledge about other levels of education, and build a solid collaboration between schools and colleges.

When college faculty and students visit schools, they demonstrate to teachers that they are committed to collaboration and willing to provide assistance. By leaving the college campus to work in the public schools, faculty members also gain knowledge about K-12 education that they can use to change their own teaching practice. When teachers visit the college campus to make presentations in courses or assist with project implementation, postsecondary educators gain insights on teaching experiences and instructional reform in public schools as well as the practitioners' perspectives on higher education reform. Project staff also found that inviting secondary school students to the college campus to participate in project activities helps to familiarize students with postsecondary faculty and the college experience.

Despite these benefits, several projects found it difficult to secure support and participation from postsecondary faculty because of tenure-track responsibilities or a general reluctance to work with public schools. Project staff learned that they must anticipate these obstacles and develop strategies to encourage involvement by college faculty.

COLUMBIA COLLEGE
Columbia, S.C.

Schools as the Center of the Community Project

Before SCCP began, students from one of the project's nearby schools would walk to the college for tutoring sessions with education students who were participating in a diagnostic teaching course. Once the project started, the course instructor moved the site of the class and tutoring sessions to the school. The instructor believed that, given the project's focus on community schools and teacher training, education students should see and learn about the schools that their students attended. By providing tutoring in their students' schools, the college students would also benefit from interactions with the students' teachers. Although the instructor sensed that the students were somewhat fearful of tutoring in an old and deteriorating school building, this fear disappeared, he said, once the education students were working at the school site on a regular basis. These project strategies reflected the instructor's belief that it was important for college faculty and students to be visible in the public schools and that it was part of his job to build this connection. In addition to teaching a course for teachers at the public school, the instructor also served on the school's school-site improvement team, which was developing a plan that would incorporate SCCP's

objectives for comprehensive school reform.

Teachers and administrators in the two participating public schools also entered Columbia College's doors. Teachers and administrators now visit college education courses to make presentations, teach lessons on curriculum and instruction, and share their experiences working in high-poverty schools. The college has made its computer, athletic, and performance facilities available to teachers and students. In addition, teachers and support staff from the two schools serve on college committees charged with improving the teacher education program.

The open-door policy between the college and the public schools has helped create a sense of trust and respect among the project participants. Public school teachers believe that the college faculty and project staff value their insights and teaching experience. Postsecondary educators recognize the value of learning from and being involved in the public schools.

Photo courtesy of Carnegie Mellon University

Quaker Valley teachers Lisa Brown, left, and Cathy Hydzik, right, count colonies of bacteria for school administrator Velma Saire, center. The experiment, featuring "glow in the dark" bacteria, was set up in Carnegie Mellon University's Biological Sciences lab. Carnegie Mellon is a member of the Commonwealth Partnership.

FLORIDA INTERNATIONAL UNIVERSITY
Miami, Fla.

For Our Children In Urban City Schools

In this program, public school participants said that they would have preferred more interaction between higher education and K-12 personnel and institutions. Teachers and administrators remarked that they would have preferred more professors in the schools demonstrating lessons, supervising student teachers, checking their theories with practice, and being a visible part of the school and its community. According to the project direc-

tor, tenure-track responsibilities prevented many faculty from becoming more involved in the project. As the project director said, Florida International University, like most other higher education institutions, has not resolved the traditional pressures associated with earning tenure, and has not yet decided where public service fits into the picture. "Until we work out this service versus publish thing, it will continue to be a struggle to get professors actually into a school."

CALIFORNIA STATE UNIVERSITY AT DOMINGUEZ HILLS
Carson, Calif.

Science, Technology Enrichment Program

The Science, Technology Enrichment Program (STEP) is a summer and academic year program for 440 sixth through eighth graders in mathematics, science, and technology. The students are drawn from several school districts in the South Bay area of Los Angeles. Thirty teachers are also involved in the project. Teachers lead the summer classes, using this time to experiment with new instructional techniques and curriculum.

The STEP project is one of several Excellence in Education projects that invited public school students to the college to participate in academic activities. Teachers and project staff stressed that conducting summer classes on the college campus helped increase students' familiarity with the college experience. As one project staff member said, "Many student participants had never been on a college campus before. Going to the university excited them about the possibilities of attending college—something that many of them had never considered." In addition, STEP students interacted with high school students participating in a magnet high school on campus; these high school magnet students also served as assistants to the project and mentors to some of the summer students. Project staff note that the students "constantly ask the high school students about their experiences" in the magnet school. Over the past three years, 10 STEP participants have been accepted to the magnet school.

JUNIATA COLLEGE
Huntingdon, Pa.

Science in Motion Biology Van Project

The college's Science in Motion project also invited students to the campus. Science fairs held on the campus provided opportunities for professors and students to work together on exhibits. Teachers and professors said that students felt comfortable calling professors by telephone or visiting the college to ask academic questions about their experiments. In short, these projects recognized the value of bringing students closer to professors and campus life for a first-hand experience with higher education. ●

3.4 Involve teachers as leaders.

Do teachers have a major role in leading activities or training their peers—and the leadership skills they need to play this role?

Several projects learned that teachers gained a sense of ownership of the initiative as well as new skills when they were involved as trainers or leaders in project activities. A few projects that hired specially qualified K-12 teachers to serve as trainers or liaisons among school, college, and project staff found that these practitioners offered valuable insights and professional development experiences to all of their partners.

However, teachers in several projects were uncertain of their own ability to train their peers in the new instructional methods they had learned and said they wished they had developed leadership skills for this purpose. Project staff learned that many teachers needed leadership training to help spread what they learned to colleagues in their school or district.

COLLEGE OF ST. SCHOLASTICA
Duluth, Minn.

Science Partnerships

Science Partnerships is a collaborative project designed to improve the teaching and learning of science and mathematics in 12 schools across seven districts. Project activities center on professional development. Eighteen teachers participate in a science and mathematics education graduate program at the college. These teachers also develop and implement thematic science curricula that are aligned with national science and mathematics standards.

The 18 teacher participants in this project are expected to serve as teacher leaders and mentors in their districts. Teachers demonstrate the curricula developed through the project and lead training activities in their districts and schools. Although developing teacher leaders was a central goal of the project, participants received little formal leadership training to promote the sharing of educational resources throughout the 18 districts. As a result, participating teachers were unsure how to deal with teachers who might not be receptive to the curriculum initiative. Newer teachers were especially apprehensive about whether their ideas would be accepted by more experienced colleagues when they returned to their districts and schools. To address teachers' concerns, the project director encouraged informal

conversations at project meetings between veteran teacher leaders and less experienced teachers on the topic of leadership and on institutionalizing the project in schools and districts. The project director believed that "peer teacher discussions" on leadership offered teachers an opportunity to learn from one another and share expertise. Experienced colleagues are seen as credible trainers, he said, and having them train their peers provides them with an added opportunity to reflect on and develop their leadership skills. He hopes to build on these peer training discussions and develop more formal leadership training activities for project participants in the future.

The project director said that the lessons he learned regarding teacher leadership in the Excellence in Education project prompted him to rethink preservice teacher training at the College. Preservice teachers, he believes, need to be prepared to assume leadership roles in their schools. To develop these skills, several preservice teachers are acting as inservice trainers. For example, preservice teachers are helping teachers install and use a new computer software package and related curriculum. The project director believes that this early training will help preservice teachers develop the leadership skills they will need in implementing and institutionalizing an innovative project within their schools.

Other Excellence in Education projects also reported concerns from teachers who were asked to assume leadership roles.

UNIVERSITY OF SOUTHERN MISSISSIPPI
Hattiesburg, Miss.

Mathematics Standards Project

The university addressed teacher leadership through formal training. Each teacher in this program participated in four days of leadership training that engaged participants in problem-solving activities. A project staff member also assisted teacher leaders in making presentations to their school's faculty.

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE
CENTRAL PIEDMONT COLLEGE
Charlotte, N.C.

Mathematics Pathways

The Teacher in Residence at the university plays a key role in this project. The teacher—on loan from the district—is responsible for conducting teacher education courses at the university and serves as the liaison between the school district and the university. The Teacher in Residence also serves on a university committee to revise the middle school and math education programs. The project director said that the teacher liaison encourages faculty members to become involved in the schools and provides a practitioner's perspective on what teachers should know and be able to do. ●

3.5 Keep everyone in the loop: Meet regularly with all partners to share information.

Does the project encourage information sharing so that partners understand each other's needs, concerns, and strengths?

Several project staff members learned that an open line of communication that supported continuous feedback of information between K-12 and postsecondary partners improved the overall quality of their projects. Frequent meetings gave participants an opportunity to review and revise the project's goals, plans, progress, challenges, and evaluation findings. Teachers also said that follow-up visits to their classrooms by project leaders to observe and to model lessons were extremely useful.

CUMBERLAND COLLEGE
Williamsburg, Ky.

Middle School Mentoring Program

Cumberland College is working with the Whitley County School District to develop and implement a mentoring program for at-risk middle and high school students. College students are trained as mentors, working with students before and after their transition from middle school to high school. Project activities include training for mentors, weekly meetings of mentors and their students including visits to the college campus, and other events to enrich the mentoring relationship.

Project staff have learned that ongoing communication is the cornerstone of this collaborative project. A committee of school and college personnel meets monthly to develop plans for the project and to discuss mentors' and teachers' needs. Ongoing, systematic communication is also maintained among school and college participants through project meetings, activities, letters, and telephone calls. The participants agree, however, that there is no substitute for face-to-face interactions and regular conversations. They have also learned that teachers who work with the mentors need to be included in the communication loop in order to receive their ideas and cooperation.

UNIVERSITY OF AKRON
Akron, Ohio

Akron Achieving Mathematical Proficiency

Project AAMP (Akron Achieving Mathematical Proficiency) is a collaborative effort between the University of Akron and the Akron Public Schools to adapt and implement an integrated mathematics curriculum in grades 6-10. Project activities include summer workshops and follow-up meetings designed to help teachers implement new instructional methods, build their mathematical knowledge, and increase their use of technology in the classroom. In 1995, 52 teachers throughout the district voluntarily participated in the project.

All of the teachers in this project said that ongoing training and coaching for teachers were the project's most valuable activities. Through regularly scheduled follow-up training sessions, project staff have helped teachers implement the new teaching methods learned in the summer workshops. The teachers noted that continuous feedback from project staff has helped make the project's goals a reality in the classroom. The staff's participation in the project has not just been an exposure to something new, but rather a meaningful engagement between college personnel and teachers over time.

HERITAGE COLLEGE
Toppenish, Wash.

Knight Scholars

The college works with three local public school districts and a tribal school to identify and prepare Native American teachers. The project's goal is to develop Native American teachers who understand Native American students' academic needs. It is addressing this goal by providing opportunities for Knight Scholars, who are Native American paraprofessionals working in the partner schools while also studying to obtain baccalaureate degrees and teaching certificates.

The project sponsors four-day summer institutes attended by Knight Scholars, teachers, administrators (school, district, and college), parents, and grandparents. The project director learned that the summer institutes created a special opportunity for all project participants to get to know each other and learn from one another. Through presentations, workshops, and other activities, the Knight Scholars share their expertise and traditional knowledge of the culture and community with teachers and administrators. The Knight Scholars have in turn learned about instructional methods, school-related requirements, and other school system issues from teachers and administrators. The project director noted that the summer events communicated to all participants that their knowledge and experiences were valuable in their own right and important to the project's success. ●

3.6 Reach out to parents and community members.

Does the project have committee meetings or other regularly scheduled events that give parents and community members a forum for learning and contributing?

A strong school-college partnership is built on a firm foundation of community and parent support. Several staff members of Excellence in Education projects learned that informing community members and families about project goals and involving them in project activities are important strategies for gaining outside approval of education reform. Family support makes implementation smoother and increases the project's chances of success, project directors found. To ensure family and community participation, a few projects have hired staff members whose sole responsibility is community outreach.

UNIVERSITY OF AKRON
Akron, Ohio

Akron Achieving Mathematical Proficiency

Project staff members in Akron have learned that the implementation of an innovative mathematics curriculum is often met with resistance and confusion from parents and the wider community. "We are running into natural resistance to change from parents and some teachers. Technology and new methods are here ... and people are a little skeptical and a little cynical ... Some parents don't want their children working in heterogenous [i.e., mixed ability] groups." Given this resistance, project staff concluded that building community awareness and support for the reform and school-college collaboration was the linchpin for the project and that more needed to be done in this area. Clarifying misconceptions of mathematics and the new reforms was identified as a key goal. The staff realized that changing attitudes is a slow process and believed that the best strategy was "to establish a solid foundation" for the program and to "move out from there." To help them in this process, the project staff employed a retired mathematics specialist from the school district to help coordinate a formalized approach to community awareness.

COLUMBIA COLLEGE
Columbia, S.C.

Schools as the Center of the Community Project

Columbia's project has hired a full-time staff member to organize parent and community outreach activities. The staff member is part of the project's task force, which is based at one of the participating schools. The task force meets monthly and consists of parents, teachers, community members, and school-based social service agency personnel. Its goal is to increase parent involvement, create a safer school and community environment, and improve the schools' image.

The full-time parent and community outreach coordinator is a long-time community resident and is regarded as a community leader. To meet the task force's goals, she conducted home visits to increase parent participation in school activities and to inform parents of their children's academic progress. She also notified families about project activities and health services that were available at the school. She maintained contact with students as well. For example, she distributed academic awards and notes of encouragement to students before they took the required state and district standardized tests. Her duties include organizing community events to publicize the project (e.g., picnics with musical entertainment) and staffing the parent resource center. The outreach coordinator documented her interactions with parents over the year and estimated that parent volunteer hours increased from practically nothing to approximately 5,000 hours per year. ●

Fourth-grade teacher Beverly Stanford welcomes students and members of the community to Howard Hedger Elementary School in Aberdeen, S.D., to thank them for participating in the Writing for Learning project. Stanford developed a cross-generational project in which her fourth graders partnered with 22 community members to explore writing through shared reading. Aberdeen Public Schools collaborated with Northern State University on the K-16 writing-across-the-curriculum project.

CHAPTER 4

Lessons Learned about Project Evaluation

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4.1 Useful evaluations are continuous and inclusive.

Does the project plan include a system for collecting and using good information for continuous self-assessment? Does the evaluation plan involve all stakeholders participating in the project?

A continuous evaluation plan, designed at the beginning of the project with contributions from all stakeholders, identifies tangible goals, measurable outcomes, and measurement strategies. To avoid a diffuse, scatter-shot set of priorities, goals and outcomes should focus on specific areas targeted for change, such as curriculum or teacher instructional skills. Also, an evaluation plan for a school-college partnership should include expected results and evaluation activities at both the postsecondary and elementary/secondary levels. (See p. 33 for a description of the stages involved in a continuous evaluation model.)

Most Excellence in Education projects found evaluation to be a challenging task. Every project had developed an evaluation plan defining success, identifying specific objectives, relating activities to those objectives, and identifying methods for monitoring short- and long-term progress as part of the original grant proposal. Many of these plans, however, were incomplete from the

continued on page 33

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

CENTRAL PIEDMONT COMMUNITY COLLEGE
Charlotte, N.C.

Mathematics Pathways

This project developed a specific, clear plan for evaluating its expected outcomes. The development and evaluation of a continuous plan were the responsibility of the project staff at the community college. The evaluation team consisted of an outside evaluator from a nearby university, a school district analyst and director of research, and two project staff members from the university and community college. Project staff members noted that the outside evaluator guided them through the identification of project goals and activities to meet those goals. The primary task of the community college staff person (who is chairman of that institution's mathematics department) was the development of a student tracking system that both the district and UNCC could use to monitor students' mathematics progress. Other evaluation activities included monitoring district test scores of students who participated in a Pathways summer academy and students whose teachers were trained in the program. A formal evaluation of changes in teaching methods has been planned.

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perspective of continuous evaluation, did not identify objectives and results at the postsecondary level, and needed substantial revision once the project was under way. In some instances, project directors learned that traditional standardized assessment instruments could not adequately measure the effects of an innovative curriculum on student achievement. Thus, identifying or developing alternative assessments was a major challenge for many projects.

Continuous Evaluation: Five Basic Stages

Basing a school-college partnership on an evaluation model that stresses continuous improvement will provide useful information throughout the life of the collaboration. Instead of viewing evaluation as an activity at the end of a project, a continuous-improvement evaluation model involves ongoing use of information for project improvement. This evaluation model involves five basic stages, but should be understood as a loop where the analyses in Stage 5 will create a need for revisiting the goals and objectives in Stage 1. The five evaluation stages are:

1. ***Identify goals and objectives.*** All parties involved in the school-college collaboration must agree on the answers to two basic questions: What are our goals for our participants? What are we doing now and how can we better achieve our goals? The next step is to develop measurable objectives to serve as benchmarks for progress toward meeting goals. Establishing objectives requires stakeholders to (a) assess the current status of progress toward a goal, (b) consider the resources available for moving forward, and (c) determine reasonable time frames for monitoring progress.

2. ***Articulate a chain of assumptions about how goals will be met.*** A continuous-improvement evaluation helps participants discover their assumptions about "how things work" in school-college collaborations and what would be required to create progress toward a desired goal. Until these assumptions are spelled out, participants involved in design and implementation may not see where conflicting assumptions could generate

continued on page 34

UNIVERSITY OF NORTH DAKOTA
Grand Forks, N.D.

Interdisciplinary Curriculum Project

This project works with an elementary and a junior high school in Grand Forks to develop interdisciplinary curriculum supported by innovative assessments of student learning. Project activities include summer curriculum workshops to develop the curricula and academic year seminars and planning.

In planning their project evaluation, staff members were initially unsure how to measure the effects of an innovative curricula that stressed higher-order thinking skills and project-oriented, hands-on learning. In this project, as in others, staff members believed that standardized tests did not adequately measure the effects of new approaches to student learning.

The University of North Dakota's project was one of the few Excellence in Education programs that placed a primary focus on developing an alternative assessment to measure the effects of the interdisciplinary curriculum project on students. The alternative assessment is based on student-centered instruction and learning within an interdisciplinary curriculum. Portfolios and student demonstrations of learning (e.g., recitals, displays, simulations) are being used to capture a comprehensive picture of the

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roadblocks. Once these assumptions are articulated, planners can develop a logical sequence of activities needed to meet project goals and assess the resources needed to carry out the activities.

3. ***Select indicators of results.*** Planners and implementers of a school-college collaboration need constant feedback on how the main activities are working and whether progress is being made toward meeting the initiative's goals. Three kinds of indicators are needed to measure progress: short-term, interim, and long-term. Short-term indicators focus on day-to-day activities (i.e., what you do); interim indicators measure what happens as a result of the day-to-day and week-to-week activities; and long-term indicators measure what results from the project activities. Indicators must be understandable and measurable.

4. ***Create a system for managing information.*** Once indicators are selected, data can be collected to measure short-term, interim, and long-term progress. In doing so, consider three factors: the types of information to be collected, the groups for whom the data are collected, and methods for collecting information efficiently.

5. ***Analyze and use the information.*** The information collected will provide the tools needed to improve a school-college partnership. These data can indicate whether targeted objectives are being met and whether it is time to revisit the stages of the evaluation plan to make adjustments in goals, activities, or indicators.

initiative's effects on student learning. Using these authentic assessments has also facilitated teacher discussions within and across grade levels on students' work and academic progress. Parents have become increasingly involved with the project through their participation in student demonstrations of learning. Although teachers and project staff view portfolio assessments as a viable alternative to standardized tests, questions remain regarding the use of portfolios in an educational environment that continues to rely heavily on traditional, standardized tests. These questions, the staff believe, require further discussion and analysis. ●

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4.2 Evaluation information helps all partners understand and improve the project.

Do all partners have access to the information and analyses produced by evaluations, so they can all use the data to refine their efforts?

Teachers, staff, and other collaborators—at all levels of a partnership—can use evaluation results to improve implementation plans and project activities. They can also use evaluation data to inform their colleagues about the project's goals and outcomes. Sharing evaluation information with all partners fosters an inclusive approach to project improvement.

MOUNT HOLYOKE COLLEGE
East Hadley, Mass.

HAMPSHIRE COLLEGE
Amherst, Mass.

Reach for the Future

Project staff members are using information from project evaluations to improve the project from year to year. For example, one year the evaluation revealed that teachers were confused about the role of the project's resource teachers, who are responsible for observing classroom teachers and providing them with feedback. Teachers thought that the resource teachers should provide resources and materials rather than conduct observations. Based on this feedback, the project staff changed these teachers' titles to "mentor/coaches" and clarified the purpose of the classroom observations. As a result, a more productive relationship has emerged between teachers and observers.

In addition, teachers reported through project evaluations that the project was trying to accomplish too much (i.e., developing both curriculum and a new instructional approach). Participants suggested narrowing the scope of the project and focusing on one topic—teaching for understanding. Project staff agreed with this suggestion and decided not to involve teachers in curriculum development. Instead, the project staff provided teachers with curricula and asked them only to learn and improve on it in order to be able to teach for understanding. ●

4.3 An evaluation should be a boon, not a burden.

Is the plan for staffing and implementing the evaluation realistic?

Several project directors learned that gathering evaluation information can be a full-time task that often requires the attention of a qualified evaluator or team of evaluators. Several Excellence in Education projects hired outside evaluators or assigned faculty members to serve as evaluators.

COLUMBUS COLLEGE
Columbus, Ga.

Algebra for All

Project staff members quickly learned that the burden of evaluating a project serving 23 schools was too heavy for a staff of two, one of whom has many other responsibilities. Due to this small staff size, plans for conducting a longitudinal study of 75 students had to be abandoned. Data retrieved from surveys of more than 1,000 individuals also proved too voluminous for analysis. The staff therefore turned to a doctoral student from a nearby university for technical assistance. With her support, according to the project director, the project revised the planned surveys to use a computer-scored format. Although the doctoral student's guidance was extremely valuable, the project's coordinator noted that they were still struggling with gathering and evaluating data, and that they would have profited from assessments that had been "professionally developed" from the beginning.

Even so, the project continues to experience a high demand for evaluation. Teachers participating in Algebra for All said they would like project staff to share evaluation data with them, so they can use the information to recruit and "sell" the program to other teachers in their schools and districts.

FLORIDA STATE UNIVERSITY
Tallahassee, Fla.

Technology Enhancing Achievement in Middle Schools

Florida State University was one of many project collaborators that learned the benefits of having an evaluator on staff. The staff recruited a faculty member who specializes in program evaluation. This evaluator developed a plan to examine the project's implementation procedures and effects on student learning.

The evaluator first collected and analyzed data to address five questions. The first three focused on implementation procedures: Do the learning activities actively involve students? Is the teaching integrated into the curriculum? Does the teacher use interdisciplinary approaches? The other two questions focused on the effects of the initiative: Are the materials distributed in the projects (e.g., teacher guides) useful? What are the project's effects on student achievement and attitudes?

The first phase of the evaluation, which focused on implementation issues, revealed that the project's implementation objectives were being addressed as intended. The evaluation, however, highlighted some areas for improvement. The project staff used this information to make a few program adjustments. In the first year, for example, the evaluation indicated that some teams were finding it difficult to use an interdisciplinary approach. In the following years, therefore, project staff members required more teacher planning meetings and provided a structured outline to organize meeting discussions. The evaluation is now focusing on the project's impact on student learning and attitudes. This part of the evaluation plan examines six categories of student outcomes, with project participants compared against a control group of students who have not received project services. Pre- and post-tests are also being used to collect data on student learning.

The project director notes that this evaluation has underscored the importance of viewing evaluation as a process. Identifying implementation problems and other issues has led to program changes and helped ensure that the project's goals are being met. ●

4.4 Good evaluations are done with—not to—participants.

Do assessment plans enable project participants to engage in and learn from the evaluation process?

To make evaluation a meaningful learning experience for everyone, projects should give teachers, postsecondary faculty, and student teachers roles in gathering information. By taking an active role in evaluation—for example, by collecting survey and achievement data and writing teacher journals—participants gain a better understanding of project goals and a greater commitment to the project. However, a few project directors have learned that participants involved in evaluation may need training in data collection and analysis.

UNIVERSITY OF PENNSYLVANIA
Philadelphia, Pa.

Taking Stock/Making Change

The University's Center for Urban Ethnography in the School of Education is working with five elementary and middle schools in the School District of Philadelphia to develop an evaluation process for shared decisionmaking and school-based management. Project activities include (1) summer and fall "cross-site" institutes to practice research methods and plan activities and (2) on-site consultations in which project staff visit schools to work with teams to tailor and implement their reform plans.

The Taking Stock/Making Change project has focused primarily on developing teachers' research skills. As teachers worked to achieve educational change through site-based management, they received training in ethnographic research methods that could help them look deeply into their school organization and question assumptions about policies and student learning. As ethnographers, teachers collected data and documented information on key areas targeted for school change. Teachers also monitored and adjusted activities at their own site as part of their self-study process. Project staff members, who are experienced evaluators, have served as "critical friends" to help guide

As a part of the University of Pennsylvania's Taking Stock/Making Change project, students joined staff in interviewing parents. At left, Jolley Christman, co-director of Taking Stock/Making Change, listens as Academy for the Middle Years Northwest student Estevan Mason interviews parent Yvonne Epps, middle.

teachers through the evaluation process. Project staff have also provided intensive training in specific research techniques, such as developing surveys, conducting interviews, and interpreting data.

UNIVERSITY OF SOUTHERN MISSISSIPPI Hattiesburg, Miss.

Mathematics Standards Project

Teachers in this project played a key role in gathering and developing evaluation materials. For example, teacher leaders gathered old lesson plans from teachers to assess whether and how they were using and enacting new curricula and instructional techniques. To measure changes in teaching instruction in the 1995-96 school year, teachers were also asked to audiotape — on their own — a half-hour lesson that represented a typical class. The project evaluator then selected a random sample of 5 to 10 percent of the tapes and listened for teacher-student interactions and the use of specific teaching methods that were emphasized in the project. ●

CHAPTER 5

Next Steps: Knight Foundation Support for Excellence in Education

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In 1995, the Knight Foundation made no new Excellence grants while the external evaluation was under way. In response to the evaluation's findings, the Foundation shifted the focus of the program away from new grants for new projects. In place of new grants, the Foundation will provide additional support over the next several years to the strongest of the current collaborations in order to aid their transition into the next phase of activity. This support is intended to help the projects:

- Continue their work to reach a point of demonstrable impact on student achievement;
- Document and disseminate what they have learned and accomplished;
- Institutionalize the best of their efforts for the longer term;
- Heighten the impact of reform activity on the higher education partner; and

In a world lab class as part of Johns Hopkins University's Roots and Wings project, facilitator Gail Hilt of Green Holly Elementary School in St. Mary's, Md., works at a computer with fourth-grader Brian Tran.

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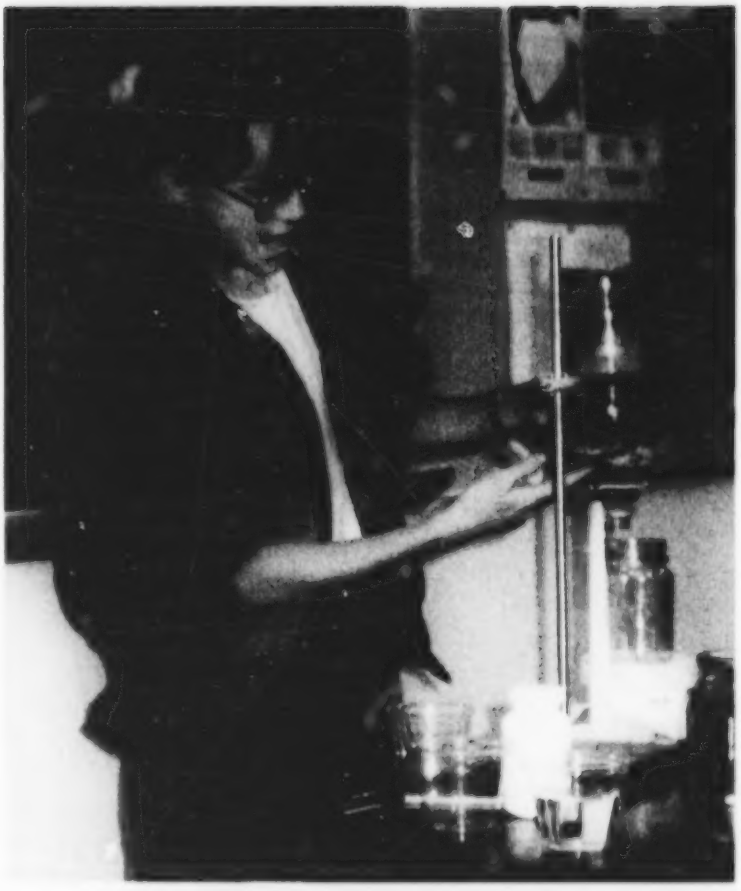
- Strengthen the existing collaboration (including expansion to bring in other partners).

Transitional funding will be provided when the Foundation believes that additional time and effort can significantly enhance the potential for improving the quality of teaching and learning without encouraging the development of financial dependence on the Foundation. Six transition grants were awarded early in 1996 and are noted in the list of projects in Appendix A.

From the beginning, the Excellence in Education Program has worked closely with the American Association for Higher Education, specifically, the Education Trust and the National Conference on School-College Collaboration. Knight Foundation expects to continue these relationships and to encourage the institutions it funds to participate in the emerging national network of school-college collaborators. Participation in the network will assure exposure to valuable experience and new ideas, constructive criticism, sources of technical assistance, and opportunities for dissemination and expanded collaboration. Information on these organizations and the conference can be obtained by contacting:

American Association For
Higher Education
The Education Trust
One Dupont Circle, Suite 300
Washington, DC 20036-1110
Telephone: (202) 293-6440 ●

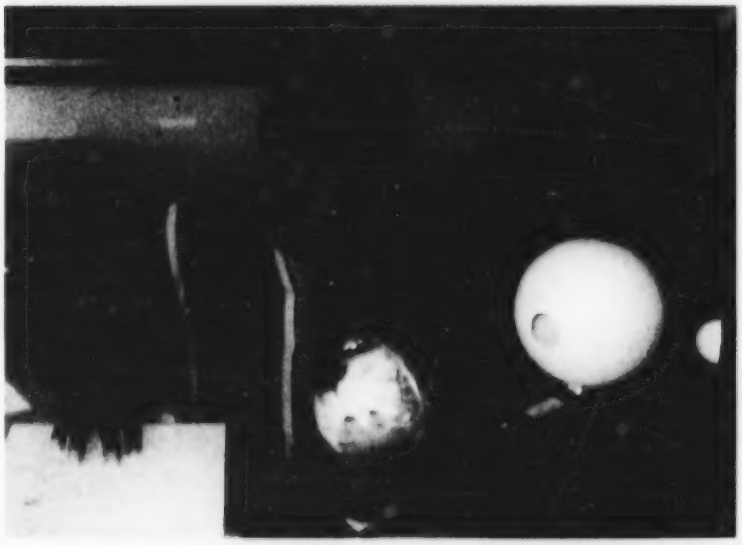


Seventh-grader Susan Nelson demonstrates a water-filtering system she constructed as part of the STEP (Science, Technology Enrichment Program) for middle schools students at California State-Dominguez Hills in Carson, Calif.

CONCLUSION

Collaborations Evolve

The lessons learned from the Excellence in Education program highlight a process of collaboration that can lead to promising K-16 partnerships and enriching academic opportunities for elementary and secondary students. Although the lessons are presented here in three stages—project design, project implementation, and project evaluation—in reality the process of developing strong school-college relations is less linear. It is characterized by a recursive process of back-and-forth experimentation, where one learns from challenging situations and makes necessary adaptations. It is precisely from heeding lessons learned that project participants can move their school-college relationship to more advanced levels of collaboration such as the "organic" level described at the beginning of this report. Attaining organic collaboration, where the agendas of the partners merge and the collaboration and shared goal are institutionally recognized and supported, does not happen overnight. As the examples in this report illustrate, developing a new relationship between two very different organizational cultures takes time, patience, energy, and perseverance. The process tends to be lengthy yet cyclical. However, as the evaluation of the Excellence in Education projects revealed, working through this process is worth the effort. The examples, lessons, and insights presented in this report can help educators and others interested in developing school-college partnerships navigate through this process and chart their own paths to comprehensive K-16 educational reform. ●



Brenda Vernon/Haverford College

Strawberry Mansion Middle School student Edward Ford works with models of the planets during a science lesson as part of Haverford College's summer institutes in mathematics and science.

APPENDIX A

Excellence in Education

Project Descriptions and Contacts

Fuller summaries of 16 of the 26 projects in the Excellence in Education program—those used to illustrate the lessons in this report—can be found in the text of the report on the pages noted below.

1. **University of Akron** (Ohio). The Akron Achieving Mathematics Proficiency (AAMP) project, a collaboration with the Akron Public Schools to adopt and implement a model integrated mathematics curriculum for middle schools and to accomplish related revisions for the university curriculum (1993). (p. 27)

   Contact: Dr. Antonio R. Quesada, Professor of Mathematics, Buchtel College of Arts and Sciences, University of Akron, Akron, OH 44325-4002. (330) 972-7192

2. **California State University at Dominguez Hills** (Calif.). An expansion and evaluation of the Science, Technology Enrichment Program (STEP) for middle school students, in cooperation with school districts in the South Bay region of Greater Los Angeles (1992). (p. 23)

   Contact: Dr. Eunice Krinsky, Professor of Mathematics, California State University at Dominguez Hills, 1000 East Victoria Street, Carson, CA 90747. (310) 243-3391

3. **University of Colorado at Boulder** (Colo.). A collaboration involving 10 public school science teachers and university faculty in the design and implementation of new integrated K-12 science curriculum for broad dissemination (1993). [The project was discontinued in 1995.]

4. **Columbia College** (S.C.). The Schools as the Center of the Community project (SCCP), a collaboration with an elementary school and middle school in the Richmond County One School District to establish "schools as centers of the community" designed to centralize educational, social, health and community services (1992). Transition support to institutionalize and evaluate the process (1996). (p. 6)

   Contact: Dr. James L. Solomon Jr., Director, SCCP, Fleming House, Columbia College, 1301 Columbia College Drive, Columbia, SC 29203. (803) 786-3785

5. **Columbus College** (Ga.). The "Algebra for All" project of the Columbus Regional Mathematics Collaborative, assisting implementation of a state-mandated comprehensive effort to improve the teaching and learning of mathematics in area schools (1993). (p. 18)

   Contact: Susan A. Pruet, Executive Director, Columbus Regional Mathematics Collaborative, Columbus College, 4225 University Avenue, Columbus, GA 31907-5645. (706) 568-2480

6. **Commonwealth Partnership** (Pa.). The Initiative for Integrated Math and Science Teaching (IMAST), engaging college and pre-college teachers in curriculum development emphasizing problem-solving and the integration of mathematics and science instruction. The partnership, a consortium of 12 independent colleges and universities in Pennsylvania, is collaborating with four school districts around Harrisburg, Lancaster, and York (1993). (p. 11)

   Contact: Ellen R. Trout, Director, Commonwealth Partnership, Franklin & Marshall College, P.O. Box 3003, Lancaster, PA 17604-3003. (717) 291-4304

7. **Cumberland College** (Ky.). The Middle School Mentoring Project, a collaboration with the Whitley County School District to develop a mentoring program involving college students with at-risk middle and high school students in Appalachia (1993). (p. 26)

   Contact: Professor Norma B. Patrick, Assistant Professor of Education, Cumberland College, 7843 College Station Drive, Walnut Street, Williamsburg, KY 40769. (606) 539-4393

8. **Florida Agricultural & Mechanical University Foundation** (Fla.). A regional outreach center to replicate the "Accelerated Schools" national school reform model developed at Stanford University (1994).

   Contact: Dr. Mila E. Ignatz, Director, Accelerated Schools Project, Center for Innovation in Mathematics and Science Education, Florida Agricultural & Mechanical University, Tallahassee, FL 32307. (904) 599-3038

9. **Florida International University** (Fla.). A collaboration with the Dade County Public Schools, Miami-Dade Community College and other community partners to organize and implement the professional development component of the For Our Children in Urban Schools (FOCUS) Program, a new approach to the preparation of elementary school teachers for service in inner-city schools and communities (1993). (p. 13)

   Contact: Ms. Jo Anne Zarowny, Director, Professional Development Component, Project FOCUS, College of Education, Florida International University, North Campus, 3000 N.E. 145 Street, North Miami, FL 33181. (305) 919-5820

10. **Florida State University** (Fla.). The Technology Enhancing Achievement in Middle Schools (TEAMS) project, a collaboration with local middle schools to a model technology-based curriculum emphasizing integrative, interactive learning (1992). Transition support to examine more extensively the impact on student achievement (1996). (p. 8)

    Contact: Dr. Robert A. Reiser, Department Head and Professor, Department of Educational Research, Box 3030, College of Education, Florida State University, Tallahassee, FL 32306. (904) 644-4592

11. **Gallaudet University** (D.C.). A collaboration with five schools adapting the professional development school model to strengthen the teaching and learning of deaf students (1994).

    Contact: Dr. David S. Martin, Professor, Education, Gallaudet University, 800 Florida Avenue, NE, Washington, DC 20002. (202) 651-5530

12. **Haverford College** (Pa.). Summer institutes in mathematics and science for middle school teachers designed to implement inquiry-based teaching and learning (1994).

    Contact: Dr. Terry Newirth, Associate Professor of Chemistry, Haverford College, 370 Lancaster Avenue, Haverford, PA 19041. (610) 896-1214

13. **Heritage College** (Wash.). The Knight Scholars Program, a collaboration with three local public school districts and a tribal school to introduce a "career ladder model" for

paraprofessionals as a means for increasing the number of Native Americans certified as classroom teachers (1993). (p. 27)

Contact: Patty Zack, Project Director, Knight Scholars Program, Heritage College, 3240 Fort Road, Toppenish, WA 98948. (509) 865-2244

14. **Indiana University Northwest** (Ind.). A collaboration with the Gary Community Schools, the community-based Gary Accord, and other local organizations to improve student achievement and career opportunities and promote community involvement in education reform (1994).

Contact: Latanya L. Williams, Project Director, The Gary Accord, c/o Carver School, 2535 Virginia Street, Gary, IN 46407. (219) 881-5380

15. **Johns Hopkins University** (Md.). A collaboration of the Center for Social Organization of Schools with the Dade County (Fla.) Public Schools to develop, implement and evaluate "Roots and Wings," a model comprehensive program for restructuring schools to assure that all students achieve world-class standards. The collaboration builds on the "Success for All" model developed at the University (1994).

Contact: Dr. Robert E. Slavin, Principal Research Scientist, Center for Social Organization of Schools, Johns Hopkins University, 3505 N. Charles Street, Baltimore, MD 21218. (410) 516-8809

16. **Juniata College** (Pa.). The Science in Motion Van Project, an expansion of the Chemistry in Motion outreach program of teacher professional development and curriculum enrichment for area high schools to include biology and junior high schools (1992). Transition support to institutionalize and disseminate the expanded Science in Motion Program (1996). (p. 9)

Contact: Dr. Donald J. Mitchell, Professor of Chemistry, Juniata College, Huntingdon, PA 16652-2119. (814) 643-4310

17. **Mercer University** (Ga.). A collaboration with the Houston County Schools to improve the teaching and learning of mathematics and science at the middle school level (1994).

Contact: Dr. H. Anne Hathaway, Associate Professor of Education, College of Liberal Arts, Mercer University, 1400 Coleman Avenue, Macon, GA 31207. (912) 752-2575

18. **Mount Holyoke College and Hampshire College** (Mass.). Reach for the Future, a collaboration with the Springfield (Mass.) and Holyoke Public Schools, is a summer program to address academic failure and school alienation among students, and the professional development of teachers (1992). Transition support to continue the development of a cadre of teachers in Springfield committed to new teaching methods designed to help middle school students become more inquisitive learners (1996). (p. 14)

Contact: Dr. Madelaine S. Marquez, Special Assistant to the President, 106 Mary Lyon Hall, Mount Holyoke College, South Hadley, MA 01075. (413) 538-2515

19. **University of North Carolina at Charlotte and Central Piedmont Community College** (N.C.). Mathematics Pathways, a collaboration with the Charlotte-Mecklenburg Schools to develop an integrated skills mastery approach to mathematics education from middle school through university (1992). (p. 15)

Contact: Dr. Phillip E. Johnson, Associate Professor of Mathematics, University of North Carolina at Charlotte, Charlotte, NC 28223-0001. (704) 547-4564

20. **University of North Dakota** (N.D.). The Interdisciplinary Curriculum Project, a collaboration with one elementary and one junior high school to establish them as professional development schools,

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resulting in curriculum revision in both the schools and the university's teacher education program (1992). Transition support to continue the development and assessment of interdisciplinary curriculum with a focus on recent national standards in health, physical education, and human relations, and to form a Pre-K-16 Council to explore collaborations in health and human services for its members (1996). (p. 33)

Contact: Dr. Mary McDonnell Harris, Dean, College of Education and Human Development, University of North Dakota, Box 7189, University Station, Grand Forks, ND 58202. (701) 777-2675

21. **Northern State University** (S.D.). Writing for Learning, a collaboration with the Aberdeen Public Schools to develop a sequenced plan for writing-across-the-curriculum instruction and assessment K-16 (1994).

    Contact: Dennis Scott, Professor of English, Interim Director of Continuing Education, Spafford 106, Northern State University, 1200 South Jay Street, Aberdeen, SD 57401. (605) 626-2568

22. **University of Pennsylvania** (Pa.). Taking Stock/Making Change, a collaboration with the School District of Philadelphia to develop an evaluation process for shared decisionmaking and school-based management in restructured elementary and middle schools (1992). Transition support to document, institutionalize, and replicate the Taking Stock/Making Change research and decisionmaking process to help individual schools determine their role in education reform (1996). (p. 38)

    Contact: Dr. Frederick Erickson, Director, Center for Urban Ethnography, Graduate School of Education, University of Pennsylvania, 3700 Walnut Street, Philadelphia, PA 19104-6216. (215) 573-3548

23. **College of St. Scholastica** (Minn.). The collaborative Science Partnerships program, promoting curriculum reform and professional development of teachers in the upper elementary grades in five school districts serving rural populations (1993). (p. 24)

    Contact: Dr. Mark Stensvold, Director, Science & Mathematics Education Graduate Program, College of St. Scholastica, 1200 Kenwood Avenue, Duluth, MN 55811. (218) 723-6033

24. **University of St. Thomas** (Minn). A collaboration with the Saint Paul Public Schools to aid the adaptation of new teachers to urban classrooms and communities (1993). [The project was discontinued in 1996.]

25. **University of Southern Mississippi** (Miss.). The Mathematics Standards Project, a collaboration with the Biloxi Public School System to implement national standards for mathematics education in grades K-12 districtwide (1993). (p. 15)

    Contact: Dr. Nancy B. Masztal, Chair, Division of Education and Psychology, The University of Southern Mississippi-Gulf Coast, 730 East Beach Boulevard, Long Beach, MS 39560. (601) 865-4512

26. **Stetson University** (Fla.). Celebration Teaching Academy, a collaboration with the State of Florida, the Osceola County Schools, and the Walt Disney Co. to develop a year-round professional development academy for teachers using the state-of-the-art resources of Celebration School, a prototype school of the future (1994).

    Contact: Dr. Larry S. Rosen, Director, Stetson University Center at the Celebration Teaching Academy, 610 Sycamore Street, Suite 210, Celebration, FL 34747. (407) 566-4132

APPENDIX B

Lessons Learned about School-College Collaboration

Project Design	Project Implementation	Project Evaluation
Give each major stakeholder a place at the table Columbia College — Schools as the Center of the Community, (p. 6) Florida State University — Technology Enhancing Achievement in Middle Schools, (p. 8)	**Before launching a project, make sure key decisionmakers and leaders are on board** Columbus College — Algebra for All, (p. 18) University of Southern Mississippi — Mathematics Standards Project, (p. 19)	**Useful evaluations are continuous and inclusive** University of North Carolina at Charlotte Central Piedmont Community College — Mathematics Pathways, (p. 52) University of North Dakota — Interdisciplinary Curriculum Project, (p. 53)
Go right to the source: Base project goals on participants' needs, concerns, ideas, and strengths Juniata College — Science in Motion Biology Van Project, (p. 9)	**Use a team approach to link partners and goals** Mount Holyoke College Hampshire College — Reach for the Future, (p. 20)	**Evaluation information helps all partners understand and improve the project** Mount Holyoke College Hampshire College — Reach for the Future, (p. 55)
Create learning opportunities among partners Commonwealth Partnership — Initiative for Integrated Math and Science Teaching, (p. 11) Florida International University — For Our Children in Urban City Schools (FOCUS), (p. 13)	**Open doors to prevent closed minds** Columbia College — Schools as the Center of the Community Project, (p. 21) Florida International University — For Our Children in Urban City Schools (FOCUS), (p. 22) California State University at Dominguez Hills — Science, Technology Enrichment Program, (p. 23) Juniata College — Science in Motion Biology Van Project, (p. 23)	**An evaluation should be a boon, not a burden** Columbus College — Algebra for All, (p. 56) Florida State University — Technology Enhancing Achievement in Middle Schools, (p. 57)
Think ahead: Prepare a long-range development and management plan Mount Holyoke College Hampshire College — Reach for the Future, (p. 14) University of Southern Mississippi — Mathematics Standards Project, (p. 15) University of North Carolina at Charlotte Central Piedmont Community College — Mathematics Pathways, (p. 15)	**Involve teachers as leaders** College of St. Scholastica — Science Partnerships, (p. 24) University of Southern Mississippi — Mathematics Standards Project, (p. 25) University of North Carolina at Charlotte Central Piedmont — Mathematics Pathways, (p. 25)	**Good evaluations are done *with* — not *to* — participants** University of Pennsylvania — Taking Stock Making Change, (p. 58) University of Southern Mississippi — Mathematics Standards Project, (p. 59)
	Keep everyone in the loop: Meet regularly with all partners to share information Cumberland College — Middle School Mentoring Program, (p. 26) University of Akron — Akron Achieving Mathematical Proficiency, (p. 27) Heritage College — Knight Scholars, (p. 27)	
	Reach out to parents and community members University of Akron — Akron Achieving Mathematical Proficiency, (p. 28) Columbia College — Schools as the Center of the Community Project, (p. 29)	

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APPENDIX C

Topics and Issues Addressed by Projects

Project Name	Curriculum Focus	Education Level	Other Special Features				
			Comprehensive Services	Professional Development	Inter-disciplinary Curriculum	Pre-service Teacher Preparation	Summer Enrichment for Students
University of Akron: Akron Achieving Mathematical Proficiency	Math	Middle		✔	✔		
California State University at Dominquez Hills: Science, Technology Enrichment Program	Science	Middle		✔			✔
Columbia College: Schools as the Center of the Community		Elementary Middle	✔	✔		✔	✔
Columbus College: Algebra for All	Math	Middle High		✔			✔
Commonwealth Partnership: Initiative for Integrated Math and Science Teaching	Science Math	Elementary Middle High		✔	✔		
Cumberland College: Middle School Mentoring Program		Middle High				✔	
Florida International University: For Our Children in Urban City Schools		Elementary	✔	✔		✔	
Florida State University: Technology Enhancing Achievement in Middle Schools	Science Reading Writing	Elementary Middle		✔	✔		
Heritage College: Knight Scholars		Elementary Middle High		✔		✔	
Juniata College: Science in Motion Biology Van Project	Science	Middle High		✔			
Mount Holyoke College and Hampshire College: Reach for the Future	Science Math Reading Writing	Middle		✔			✔
University of North Carolina at Charlotte and Central Piedmont Community College: Mathematics Pathways	Math	Middle		✔	✔		
University of North Dakota: Interdisciplinary Curriculum Project		Elementary Middle		✔	✔	✔	
University of Pennsylvania: Taking Stock/Making Change		Elementary Middle		✔			
College of St. Scholastica: Science Partnerships	Science Math	Elementary		✔			
University of Southern Mississippi: Mathematics Standards Project	Math	Elementary Middle High		✔			

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Acknowledgements

The Excellence in Education Program itself has operated as a collaboration with many partners—first and foremost, the project directors listed in Appendix A and the teams of school, college and community collaborators they represent.

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